Application No.: 10/749770   Docket No.: MWS-097

REMARKS

Claims 1-38 are pending, of which claims 1, 17 and 23 are independent. Applicant has amended claims 1, 3-5, 23 and 25-27. Claims 39 and 40 have been added. No claims have been deleted and no new matter has been added.

Allowed Claims

Applicant notes and thanks the Examiner for the indication of the allowance of claims 17-22.

Objected to Claims

The Examiner indicated that claims 3-5, 8-12, 16 (which are dependent on independent claim 1) and claims 25-27, 30-33 and 38 (which are dependent upon independent claim 23)were objected to as being dependent upon a rejected base claim but would be allowable if re-written in independent form. Applicant has amended the underlying independent claims 1 and 23 as set forth below and now believes all of the claims to be in condition for allowance.

Claim Rejections Pursuant to 35 U.S.C. §102(b)

Claims 1-2, 6-7, 13-15, 23-24, 28-29 and 34-37 were rejected as being anticipated by Toll, Lawrence R et al (United States Publication Number 2002014672, hereafter "Toll"). For the reasons set forth below, these rejections are respectfully traversed.

Summary of Claimed Invention

The claimed invention provides a method of displaying the probabilities associated with a Markov model as a series of interactive plots. The Markov model may be an ordinary Markov model or a Hidden Markov model. More than one dimension of probability data associated with a Markov model is presented to a user in a concise manner. Heat maps may be used to display probability data from a Markov model so that the user can identify and understand hidden patterns and information in the data such as state and emission transitions which are not possible to see with a state diagram plot.

7

Application No.: 10/749770   Docket No.: MWS-097

Summary of Claim Amendments

Applicant has amended independent claim 1 and independent claim 23 so that they now indicate that more than one dimension of probability data from a Markov model is displayed in a heat map. The claim element of displaying the more than one dimension of probability data from a Markov model in a heat map was previously found in the objected to claims 3-5 and 25-27. Additionally, Applicant has added new claims 39 and 40 which indicate that three dimensions of probability data from a Markov model are displayed.

Summary of Toll

Toll discusses a system for comparing biopolymer sequences. A model is specified that includes at least two different characterizations of states of matching between segments of sequences at defined positions. The model may be a probabilistic model, such as a Hidden Markov model, that can express a probability that a given set of sequences is a set of sequences of the model.

Argument

As noted above, Applicant has amended independent claims 1 and 23 to indicate that more than one dimension of probability data from a Markov model is displayed in a heat map. The display of more than one dimension of probability data from the Markov model using a heat map is not disclosed by Toll. The use of the heat map to display the probability data was a claim element found in each of dependent claims 3-5 (and their corresponding medium claims 25-27) which the Examiner indicated were allowable if re-written in independent form. Applicant submits that following the addition of the heat map claim element to the underlying independent claims 1 and 23, all of the remaining claims are in condition for allowance.

Claim Rejections Pursuant to 35 U.S.C. §102(e)

Claims 1-2, 13-15, 23-24, and 34-37 were rejected as being anticipated by Menon et al (United States Publication Number 20040176879, hereafter "Menon"). For reasons set forth below, these rejections are respectfully traversed.

8

Application No.: 10/749770   Docket No.: MWS-097

Summary of Menon

Menon discusses a transient fault detection system that helps improve fault detection performance in transient conditions. The transient fault detection system includes a Hidden Markov Model detector that receives sensor data during transient conditions and determines if a fault has occurred during the transient conditions.

Argument

Applicant reasserts the argument set forth above regarding the Toll reference. Applicant has amended independent claims 1 and 23 to indicate that more than one dimension of probability data from a Markov model is displayed in a heat map. The display of more than one dimension of probability data from the Markov model using a heat map is not disclosed by Menon. The use of the heat map to display the probability data was a claim element found in each of dependent claims 3-5 (and their corresponding medium claims 25-27) which the Examiner indicated were allowable if re-written in independent form. Applicant submits that following the addition of the heat map claim element to the underlying independent claims 1 and 23, all of the remaining claims are in condition for allowance.

Claim Rejections Pursuant to 35 U.S.C. §103(a)

Claims 6-7 and 28-29 were rejected by the Examiner under 35 U.S.C. §103(a) as being unpatentable for obviousness over Menon in view of Steeg (United States Patent Number 6,493,637, hereafter "Steeg") or Toll. For the reasons set forth below, the rejections are respectfully traversed.

As noted previously, neither Menon nor Toll disclose, teach or suggest the heat map claim element added to the underlying independent claims 1 (upon which claims 6-7) and 23 (upon which claims 28-29 are dependent). It follows therefore that the combination of Menon in view of Toll also fails to teach or suggest all of the elements of the independent claims upon which claims 6-7 and 28-29 are dependent. The Examiner cited Steeg as disclosing a hidden

9

Markov model used in a speech recognition and financial modeling system (claim elements of claims 6-7 and 28-29). However, Steeg, which discusses a system for detecting coincidences in a data set of objects, also does not teach or suggest the use of a heat map to display more than one dimension of said probability data from a Markov model. Accordingly since the suggested combinations of references fail to disclose all of the elements of the underlying claims, Applicant requests the withdrawal of the rejections and the allowance of claims 6-7 and 28-29.

New Claims

Applicant has added independent claims 39 and 40 which include the claim element specifying that three dimensions of the probability data from the Markov model are displayed. Toll, Steeg and Menon all lack this newly added limitation of the display of three dimensions of probability data.

10

Application No.: 10/749770   Docket No.: MWS-097

CONCLUSION

In view of the above amendment, Applicant believes the pending application is in condition for allowance.

Applicant believes no fee is due with this statement. However, if a fee is due, please charge our Deposit Account No. 12-0080, under Order No. MWS-097 from which the undersigned is authorized to draw.

Dated: September 8, 2005   Respectfully submitted,

By _____
John S. Curran
Registration No.: 50,445
LAHIVE & COCKFIELD, LLP
28 State Street
Boston, Massachusetts 02109
(617) 227-7400
(617) 742-4214 (Fax)
Attorney/Agent For Applicant

11